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# **32<sup>nd</sup> ANNUAL USN–USMC SPECTRUM MANAGEMENT CONFERENCE**

***7 - 11 March 2011, San Diego, CA***

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# AGENDA

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- ❑ **REORG – REORG – REORG**
- ❑ **Navy Actions in support of the Broadband Plan**
- ❑ **Spectrum Usage Roadmap**
- ❑ **Executing OPNAVINST 2400.20F**



# CNO's Vision

## *Threshold of a new Era Information Dominance*



*“We have begun a reorganization in the Navy, within our staff in Washington and in the Fleet, to better address the challenges of the cyberspace and networks, and the technologies that are so important to that evolving work in which we will operate for decades to come.”*

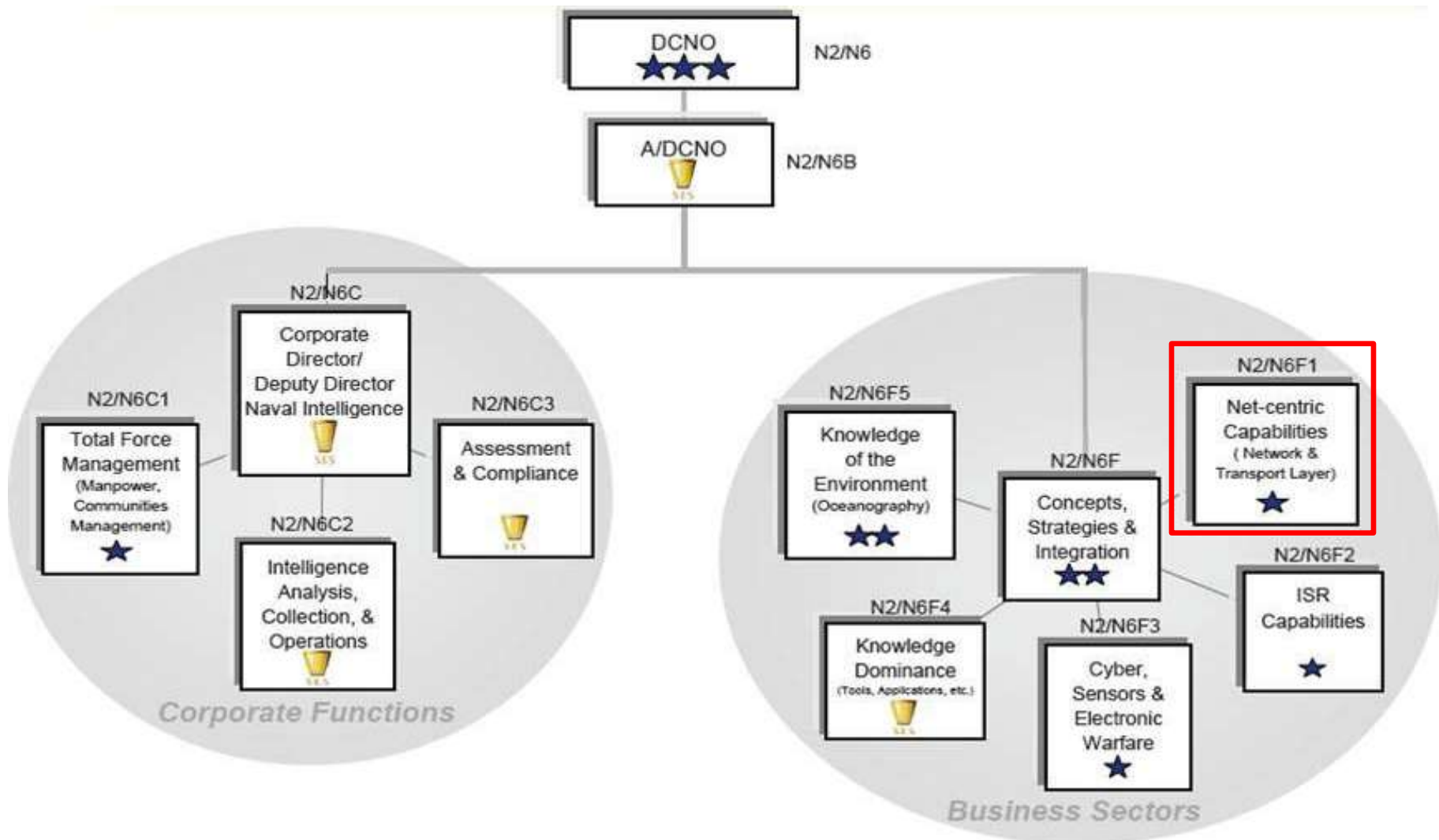
*CNO Message*

*~ Navy times, August 2009*



# The New N2N6

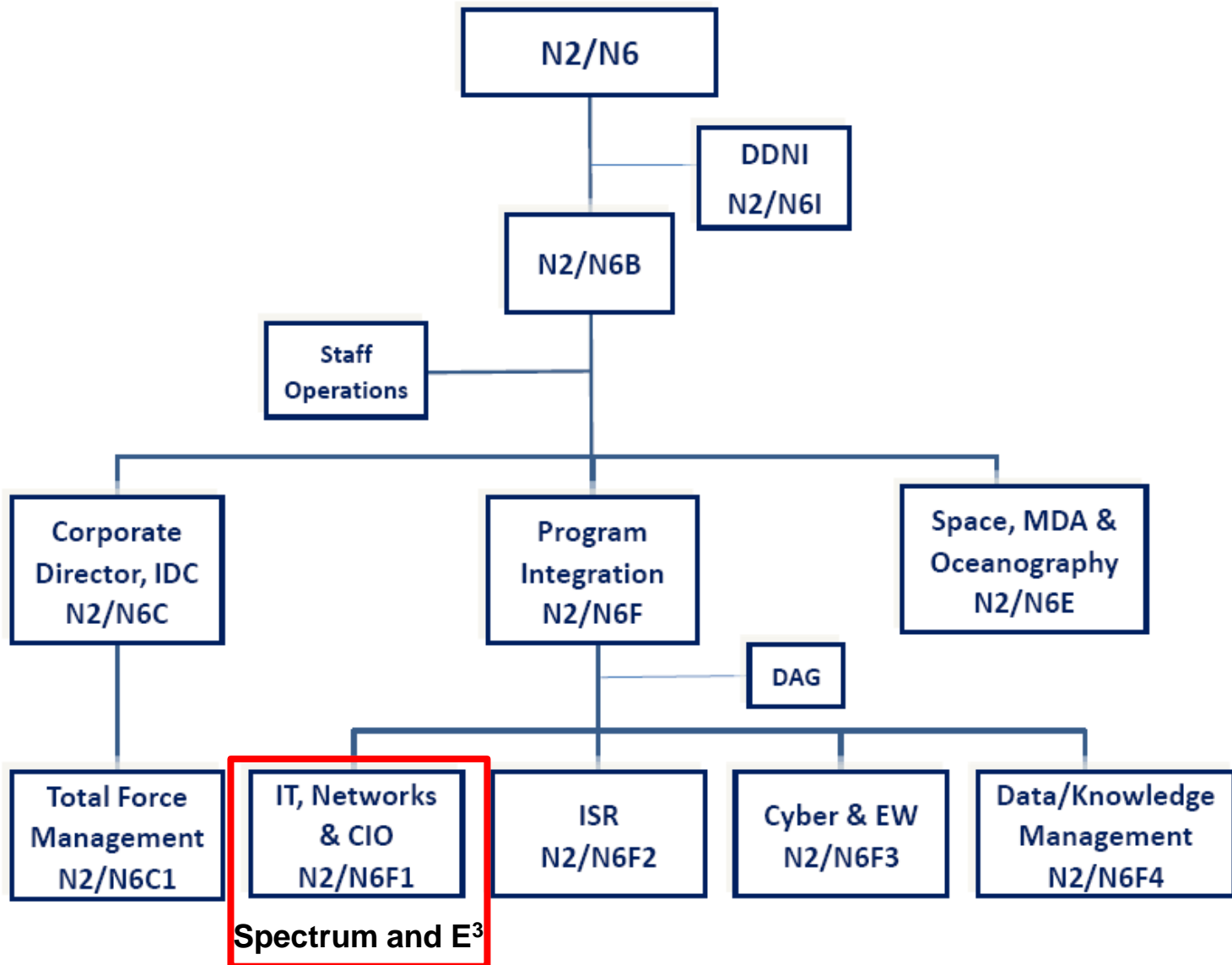
(last year)





# The New N2N6

(as of last week)





# Who's Who in the Zoo

## DCNO N2N6 Information Dominance

*VADM Jack Dorsett, N2N6*

*Mr. Dave Weddel, N2N6B*

*RADM Kendall Card, Concepts, Strategies and Integration N2N6F*

*RDML Gretchen Herbert, Net-Centric Capabilities*

## Office of the Chief of Naval Operations Spectrum / EMP / EMI / EMC

*Mr. D. Mark Johnson, CNO N2N6F1221*

**CFFC**

**NAVYBERFOR**  
*CAPT Gregg Smith*

**Navy & Marine Corps  
Spectrum Center (NMSC)**  
*Tom Downie*

**SS Senior Analyst**  
*Scott Hoschar*  
(OPNAV N2N6F1221)

**E<sup>3</sup> Senior Analyst**  
*Paulo Perini*  
(OPNAV N2N6F1221)

**NSWC Support E<sup>3</sup>**  
*Ken Armstrong*  
(OPNAV N2N6F1221)

**NSWC Support (ICDs, etc)**  
*Pete Marti*  
(OPNAV N2N6F1221)

**Naval Sea Systems Command  
(NAVSEA)**  
*J. Don Pierce*

**Naval Air Systems  
Command  
(NAVAIR)**  
*Michael Squires*

**Space and Naval Warfare  
Systems Command  
(SPAWAR SSC SD)**  
*Dave Southworth*



# N2N6 Roles and Responsibilities

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- ❑ Navy Policy for Spectrum Management and Spectrum Supportability
  - DCNO N2N6 is Spectrum Management lead for all N-codes
  - N2N6B is USN MCEB Principal Deputy
  
- ❑ Sponsor E<sup>3</sup> Program for the Navy
  - Problem Avoidance – Up Front System Engineering
  - Problem Resolution – Air, Ship, Sub and Shore
  - Fleet Engineering Tools





# Current Beltway State of Play!

## Legislation



**Inventory  
Share  
Sell**

(None are law--yet)

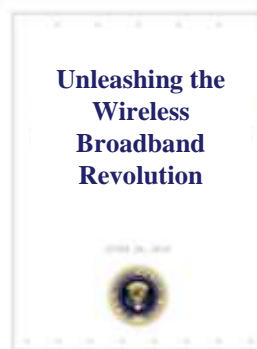
## Nat'l Broadband Plan



**Wireless broadband  
"needs" 500 MHz**

(Beach front, please)

## Executive Memo



**Cooperate to find  
500 MHz**

(~200 MHz Federal)

## NTIA Fast Track



**We've found 115 MHz  
to share!**

(Keep off the beach!)

## NTIA 10-Year Plan

**10 Year Plan**



Gary Locke, Secretary  
Oct 2010

**Make 500 MHz  
available  
in 10 years**

(Find it in 1-2 years!)

***Economics, vice National Security, is Driver***





# National Broadband Plan Execution

## ❑ 'Fast Track' (Phase I)

- Two spectrum bands evaluated for 'sharing' with commercial wireless industry within the first 5 years of the broadband plan
  - Band 1 impacts METOC operations
  - Band 2 impacts AN/SPN-43 Air Marshalling Radar, SPY-1, Cobra Judy, and two (2) future Navy advanced radars
- Completed Oct 2010
- A total of 115 MHz identified for sharing with commercial wireless services in the US&P

## ❑ '10-Year Plan' (Phase II)

- In progress with an estimated completion date Oct 2020
- Will identify the remaining Federal/non-Federal spectrum (385 MHz) to be repurposed for commercial wireless broadband use
- First Federal band to be evaluated: **1755 – 1850 MHz**



# Fast Track Results in Radar Band

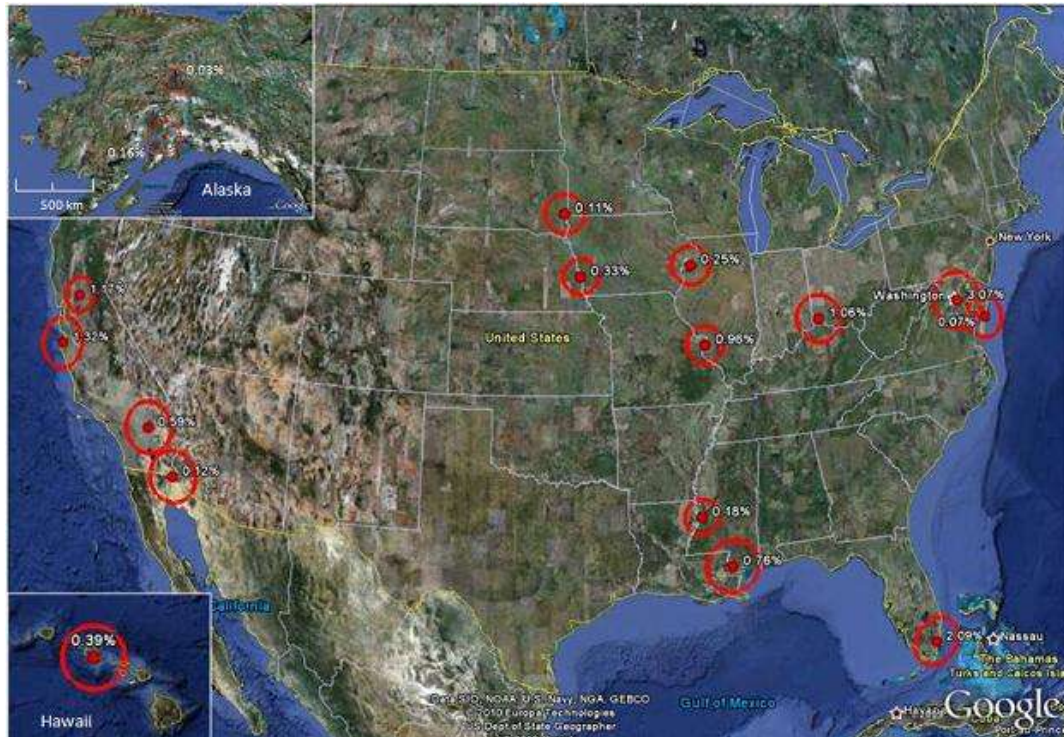


- ❑ DoD agreed share upper 100 MHz of the radar band with commercial users
- ❑ Commercial broadband users cannot operate within exclusion zones shown above (yellow lines)
- ❑ Exclusion zones ensure Navy radar operations are not impacted





# Fast Track Results in METOC Band



- ❑ DoD agreed to restrict usage to the lower portion of the band, freeing the upper 15 MHz for commercial use
- ❑ Commercial broadband users must maintain physical separation ('exclusion zones') from DoD METOC receiver sites as shown above
- ❑ Exclusion zones ensure Navy METOC operations are not impacted



# Key Navy Systems in Fast Track and 10-Year Plans

## Land Mobile Radios

406 - 420 MHz  
10 yr plan

## Meteorological Systems

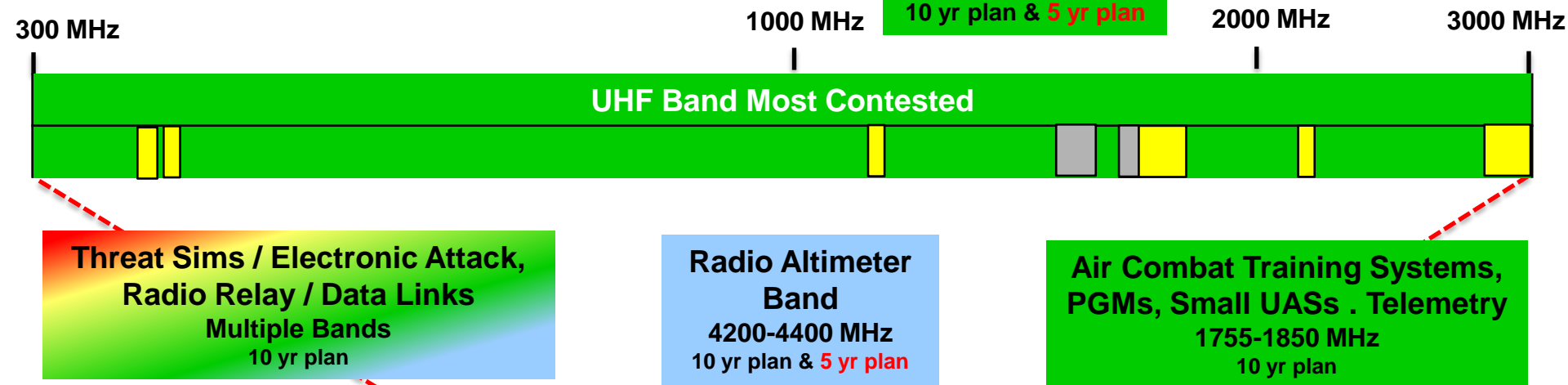
1675 - 1710 MHz  
10 yr plan & 5 yr plan

## Tactical Comm and Satellite C2

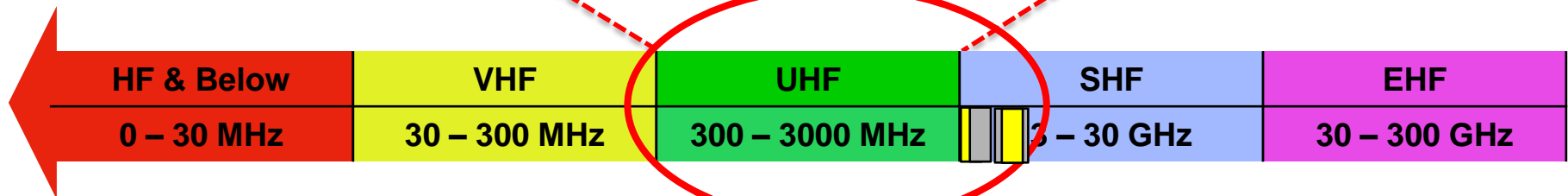
1755 - 1850 MHz  
2200 - 2290 MHz  
10 yr plan & 5 yr plan

## Surveillance Radars

2700-3650 MHz  
10 yr plan & 5 yr plan



## NTIA Focus Area



Non-inclusive list - Hundreds of unique pieces of equipment



# Executing OPNAVINST 2400.20F

## *E<sup>3</sup> Program*

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- ❑ Participated in 158 Platform Technical Warrant Reviews
  - Average 13 per month
- ❑ Participated in 203 System Reviews
  - Average 17 per month
- ❑ Successfully resolved high visibility (CASREP) EMI issues:
  - Determined best fix for SPQ-9B EMI to SPS-73
  - Performed EMI troubleshooting on SONAR EMI problem reported at sea on USS SAN FRANCISCO.
  - Successful test of TV-DTS Fix Kit for LPD's
- ❑ 44 Ship EMC and 70 Ship RADHAZ Certifications
- ❑ 10 Strike Group EMI Capabilities & Limitations Deliveries
- ❑ Significant Policy Updates
  - Issued Rev 2 Change 2 of “Handbook of Shipboard Electromagnetic Shielding Practices”, S9407-AB-HBK-010



# Executing OPNAVINST 2400.20F

## *JCIDS Document Reviews for E<sup>3</sup> & SS*

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- ❑ Since Fall of 2005, an OPNAV staff process is in place to review **ALL** JCIDS documents for E<sup>3</sup>/SS
  - Includes ICDs, CDDs, CPDs, and now ISPs
  - Ensure E<sup>3</sup> and Spectrum Supportability requirements are appropriately identified
  - Per CNO N6/N7 Memo 27 May 2005 “FORCEnet Capabilities / Requirements and Compliance Policy”
    - Contains a Spectrum Supportability and E<sup>3</sup> Compliance Action List (CAL) that includes Electromagnetic Pulse (EMP) effects
    - Also Enclosure 4 of OPNAVINST 2400.20F, 19 July 2007



# Executing OPNAVINST 2400.20F

*JCIDS Document Reviews for E<sup>3</sup> & SS – cont'd*

❑ Reviewed **1052** documents since 2005

- In **2010** reviewed **171**
- In 2011, **55** reviewed so far

❑ How we are doing - metrics

- Getting the word out
- Significant progress
- Goal = 0% comments

METRICS	
Year	Comments
2005	70%
2006	63%
2007	45%
2008	38%
2009	15%
2010	11%





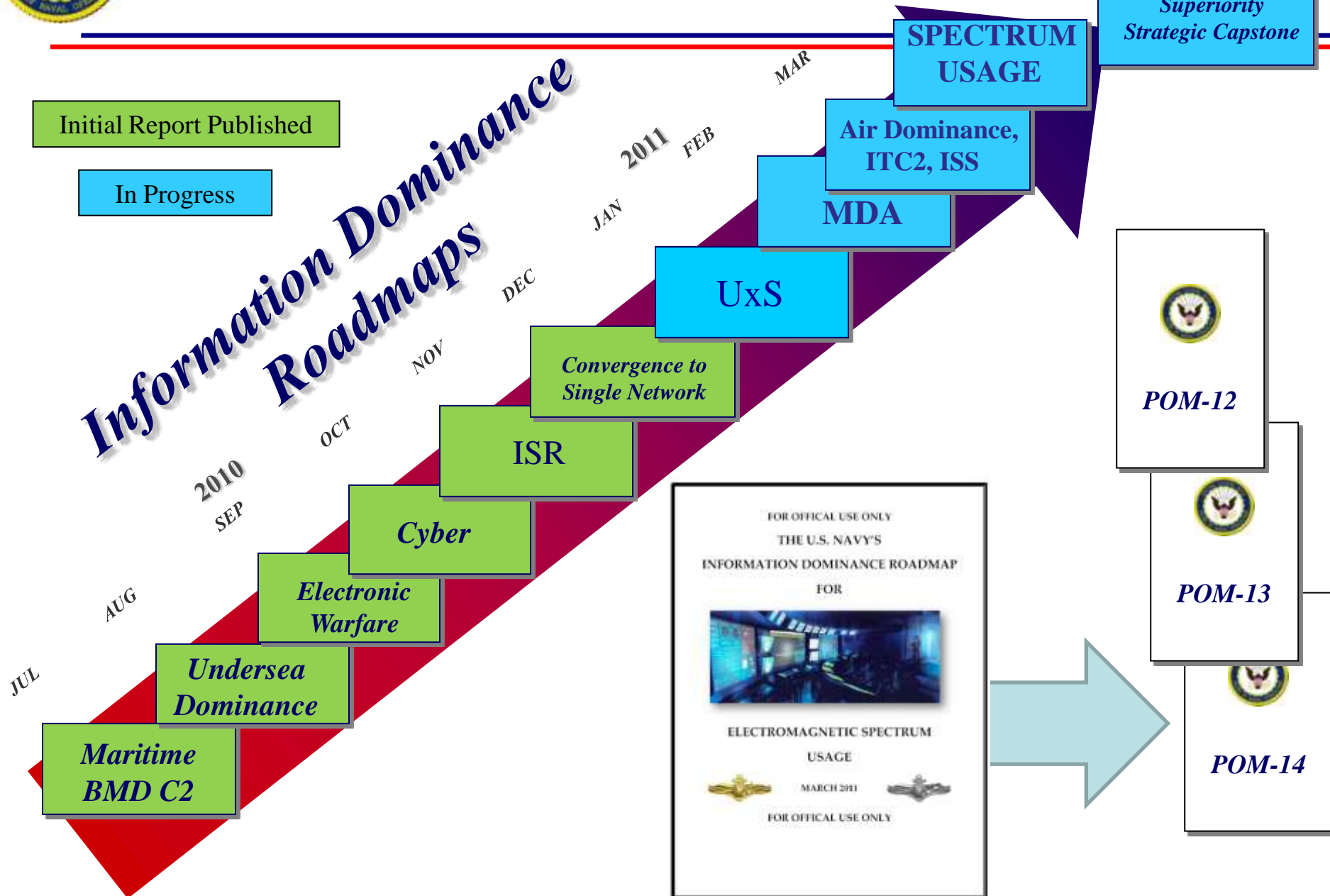
# Update OPNAVINST 2400.20F

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- ❑ New N2N6 organizational construct for Information Dominance
- ❑ Alignment with current DODI 4650.01 and soon to be issued DODI 3222.3
  - SSRA terminology
  - Shore base roles and responsibilities
- ❑ Automate the Spectrum Certification business process
  - ESC business process manager via DKO
  - Visible & Transparent with Metrics



# Informing Navy Program Decisions





# Information Dominance Spectrum Usage Roadmap

- ❑ Electromagnetic Spectrum is a Finite Resource.
- ❑ Global Demand for Spectrum Increasing -- Military Spectrum Decreasing
- ❑ C2 & Management of Spectrum Static & Inefficient
- ❑ Requires Approach to Protect Spectrum Availability & Dynamic C2 Capability



Information Dominance Warfare Officer

Dynamic C2 of Spectrum Critical for Information Dominance



# Spectrum Operations –Tomorrow

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## ❑ Capability:

- Dynamic Use and Re-use of Spectrum
- C2 of Spectrum
- Spectrum Management & Agility Embedded within System

## ❑ Warfighter Benefit:

- Operator Awareness of Spectrum COP
- Maximize Warfighter use of Spectrum for EW, Radar and Communication Capabilities
- Capabilities Adaptable to Changing Spectrum Landscape
- Reduction of Topside Electromagnetic Interference & RCS



YO! DUDE...  
BACK  
HERE

Q

WHAT WILL THE  
WARRIOR-GUARDIAN  
OF THE FUTURE  
LOOK LIKE?



CYBER  
SECURITY



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# QUESTIONS ?